1 Question: Describe the most difficult hurdle you had to overcome in implementing your solution.
Answer: The most challenging hurdle was handling **missing prerequisites** and resolving **Puppet code syntax issues** during implementation.

Initially, Jenkins installation failed because java was missing. Java was not available on the system. I reviewed the official Jenkins documentation and identified the correct Java requirement. I resolved this by adding the Adoptium/OpenJDK repository and managing Java installation directly through Puppet to ensure consistency and repeatability.

Another challenge was **Puppet manifest syntax errors**, particularly with file content definitions. I addressed this by validating the manifests using **puppet parser validate,** correcting the syntax, and ensuring proper ordering and notifications between resources.

Overcoming these issues helped me deliver a **fully automated, idempotent solution.**

2 Question: Please explain why the requirement (f) above is important.
Answer: This requirement is important because it ensures **idempotency**, which is a core principle of configuration management tools like Puppet. Redundant actions like reinstalling packages or reopening ports can restart services unnecessarily and can create service/application disruption. With idempotency re-running the code keeps the system in the desired state without introducing inconsistencies. The system remains predictable even after multiple Puppet runs.

3 Question: Where did you go to find information to help you?
Answer: I referred below sites and YouTube video to find the information.
i) https://www.jenkins.io/doc/book/installing/linux/#red-hat-centos - Jenkins official website to get the documentation for installing jenkins on Linux.
ii) https://youtu.be/2-L0WohfsqY - YouTube video on how to install Jenkins on Rocky Linux 9.
iii) https://adoptium.net/installation/linux/#_centosrhelfedora_instructions - Adoptium website to get the information and documentation to install openjdk-21 on Centos.

4 Question: Briefly explain what automation means to you, and why it is important to an organization's infrastructure design strategy.
Answer: Automation means using tools and code to consistently provision, configure, and manage infrastructure without manual intervention. Automation is important to an organization's infrastructure design strategy because it: improves consistency, reduces errors,

and enables scalable, repeatable deployments. This makes infrastructure more reliable and easier to manage as environments grow.